

How LBNL & UCB Innovations Get Commercialized... Locally



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Agenda: *15 Minutes*

1. How UCB/LBNL Innovations Get Commercialized
2. How Can the Commercialization Occur Locally
3. Case Study: Berkeley CA
4. Q & A

Research: *How Univ Innovations Get Commercialized ?*

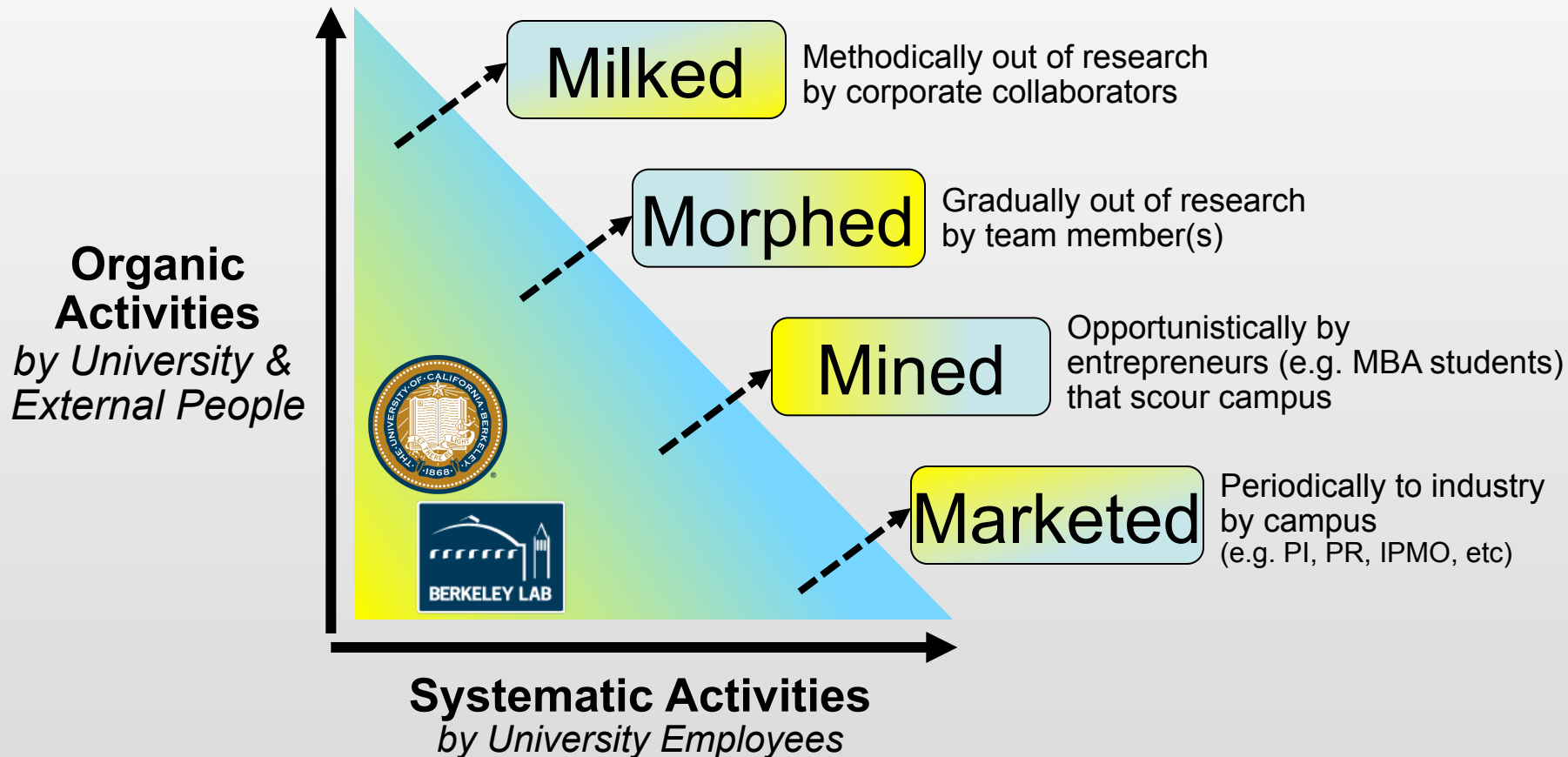
❑ **Questions:** How do university innovations get commercialized?

- Conventional answer is linear (research=>invention=>license =>commercialize)
- What and/or who catalyzed the commercialization?
- How are universities involved in the process?
- How can universities increase innovation commercialization?

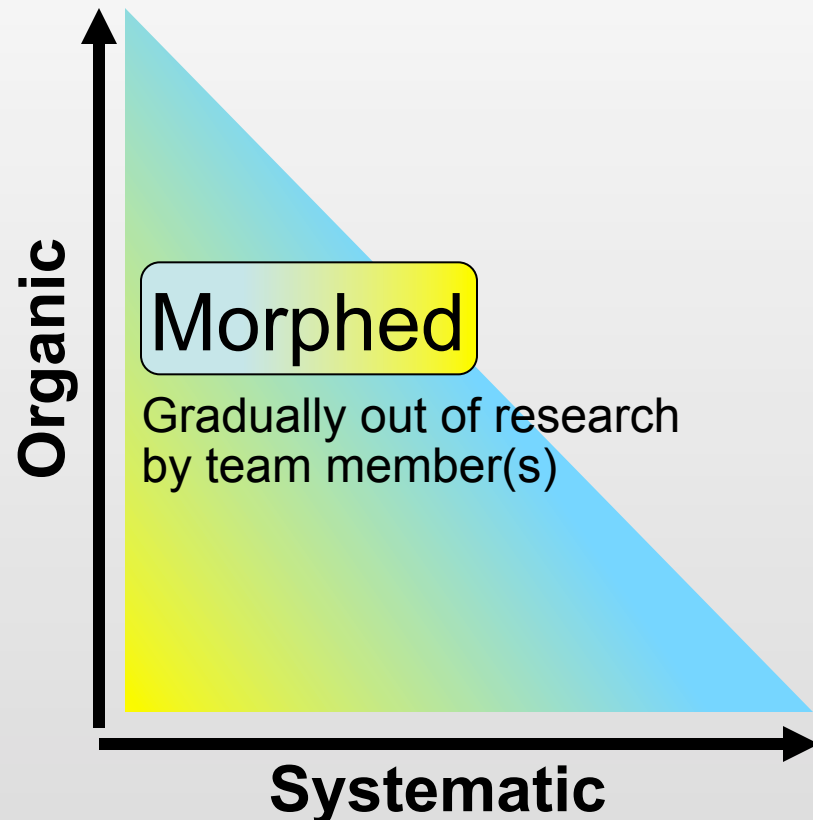
❑ **Answers:**

- Researched commercialization of >50 UCB & LBNL innovations
- Research revealed 4 common patterns/pathways
- Developed a useful framework based on 4 patterns
- Developed strategies for optimizing the 4 pathways

4Ms Framework: 4 Pathways for Commercialization

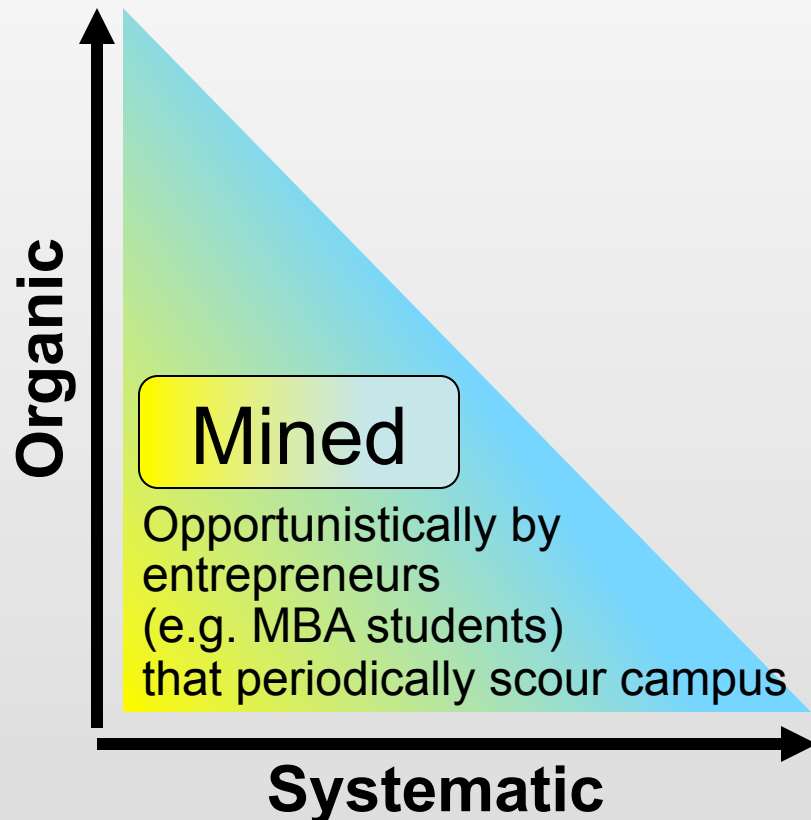


4Ms Framework: ***Morphed***, *Mined*, *Milked*, *Marketed*



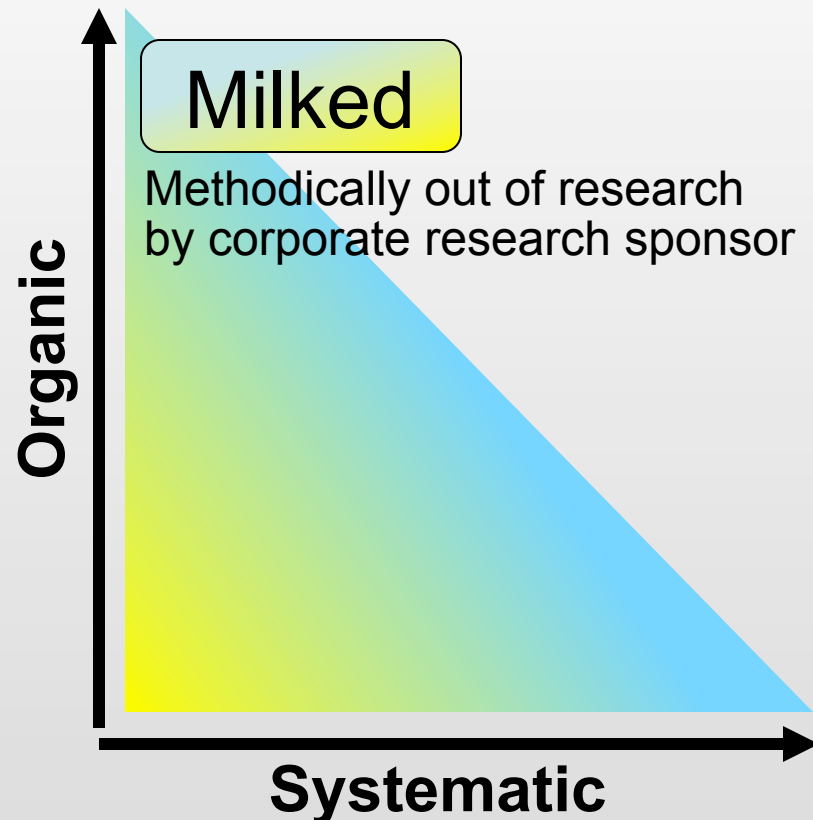
- ❑ Examples: Amyris, Calimetrix, CaliSolar, CellASIC, Chiron, Ensighta Security, Excellin, Fluxion Biosystems, GoodGuide, Harmonic Devices, Hybrid Wisdom Labs, Inktomi, Integrated Diag, IntelliOne, Kalinex, Lumiphore, Mercator Med, MicroClimates, MicroFluiDX, OnWafer, ON Diagnostics, PhotoSwitch Bioscience, Redwood Bioscience, Safely, SiClocks, TheraFuse, Urban Scan, Verimetra Med, Wireless Industrial Tech, Dust Networks, Iris AO, SiTime, NanoGripTech*
- ❑ Drivers:
 - Quantity & Quality of Research
 - Ecosystem: Spin-out vs Blast-out
- ❑ IP:
 - Some obtain exclusive license to improve biz plan & attract investors
 - Some ignore or abscond with IP

4Ms Framework: *Morphed, **Mined**, Milked, Marketed*



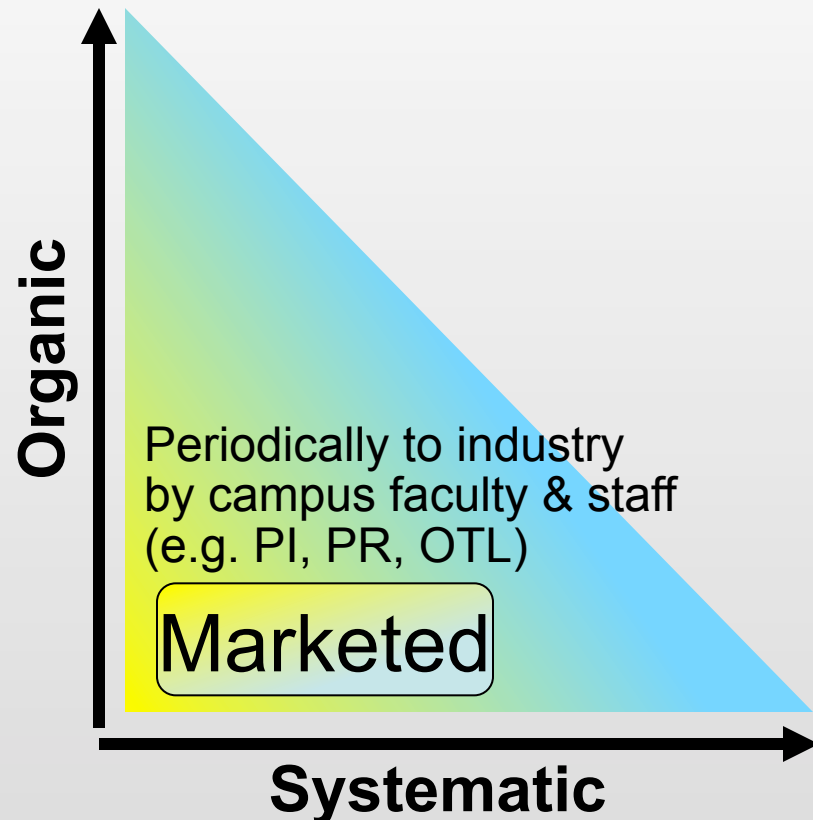
- ❑ Examples: Adura Tech, Aurora Biofuels, CommandCAD, Euclid Media, MediFuel, NanoRay, nanoPrint
- ❑ Drivers:
 - Quantity & Quality of Research
 - MBAs, Biz plan comp, OTL mrktg
- ❑ IP:
 - Many obtain exclusive license to improve biz plan & attract investors
 - Some ignore or abscond with IP
- ❑ Comments:
 - Pathway with highest growth rate
 - MBAs are the campus' s EIRs

4Ms Framework: *Morphed, Mined, **Milked**, Marketed*



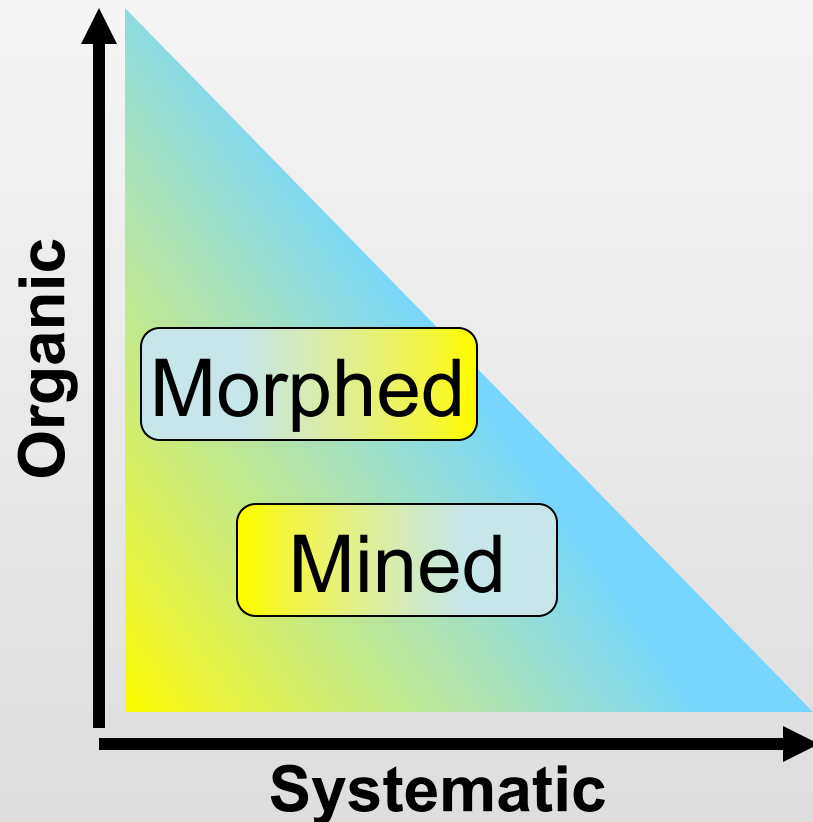
- ❑ Examples (*that licensed IP*):
Analog Devices, **Nueprene** (XL Tech), **Google**, Honeywell, Intel, Berkeley Bionics (first morphed then milked)
- ❑ Drivers:
 - Great sponsored research with optimized terms (i.e. 1st access, NERF, open source, etc)
 - Off-campus corporate labs (i.e. BWRC, Intel, Cadence, Yahoo, Starkey, etc)
- ❑ IP:
 - Some jointly own IP
 - Some obtain a license to legally use IP or thwart competitors
 - Some ignore or abscond with IP (why license when get know-how)

4Ms Framework: *Morphed, Mined, Milked, **Marketed***

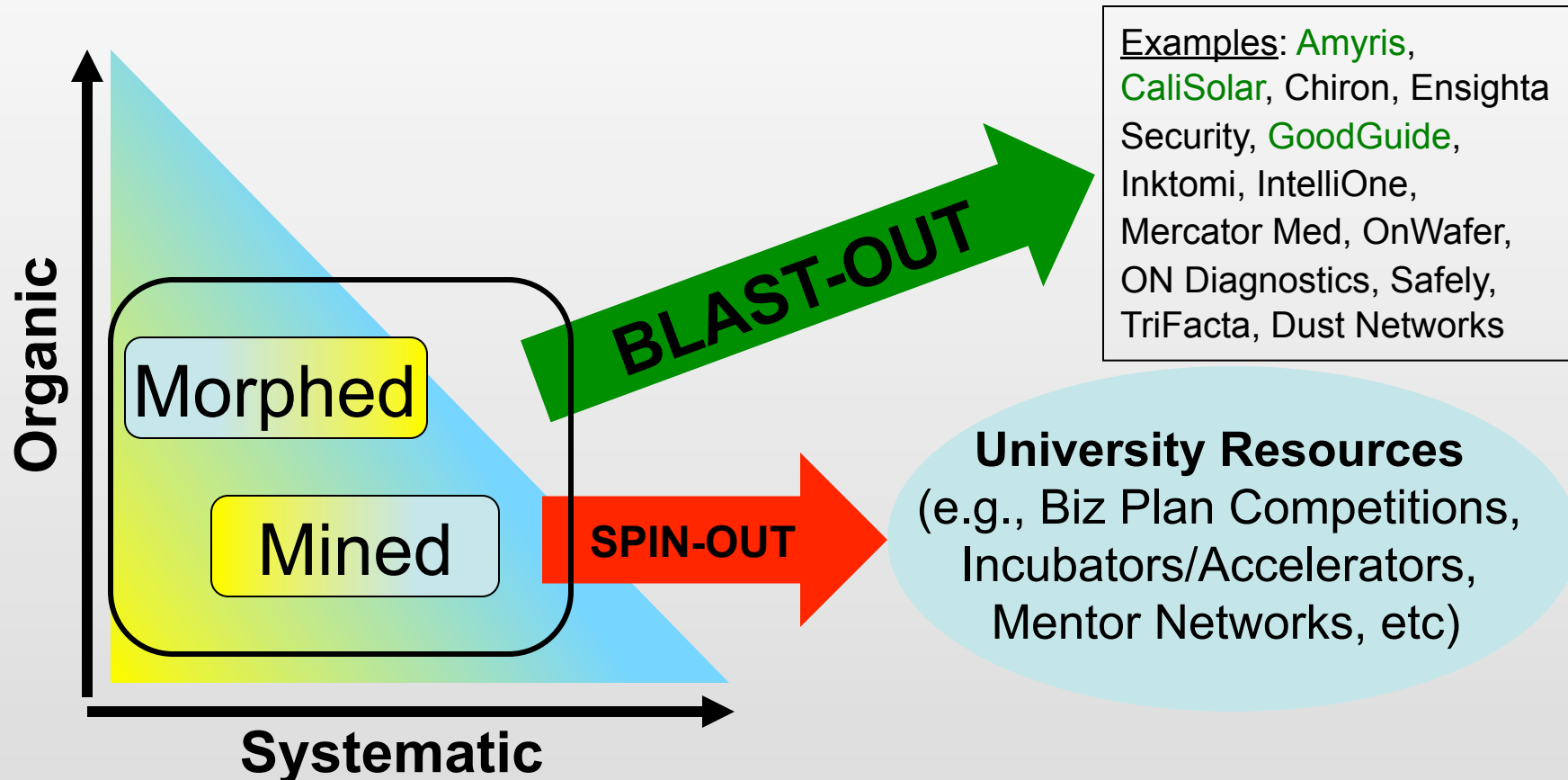


- ❑ Examples: [Arkal Medical](#), Cisco, [ClimateCooler](#), [FuelFX](#), [Luminus Devices](#), Honeywell, Microchip Biotech, Renovis, [Sand9](#), Silicon Basis, [Solexel](#), Vitesse, 3M
- ❑ Drivers:
 - Quantity & Quality of Research
 - Marketing (i.e. IP Licensing offices, University PR programs, Faculty pubs & ppts, Patent pubs, etc)
- ❑ IP:
 - Most obtain exclusive license to stay legal, improve BP, attract investment, or thwart competitors
 - Some ignore IP or abscond with IP
- ❑ Comments: Didn't get *morphed, milked* or *mined* because tech or market too nascent when invented

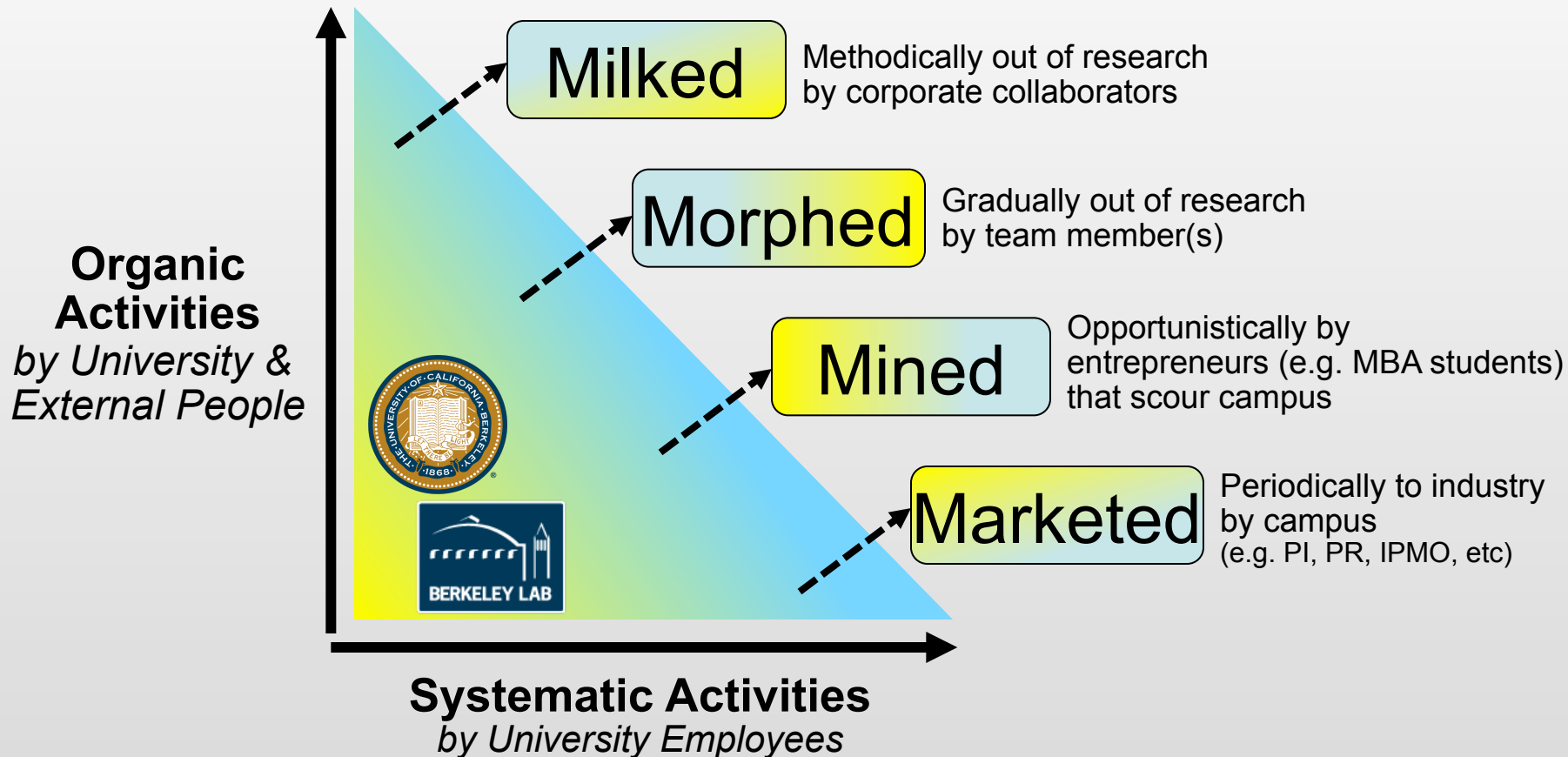
4Ms Framework: *University Startups*



University Startups: *Spin-outs vs Blast-outs*



4Ms Framework: 4 Pathways for Commercialization



Innovation Ecosystem: *Definition*

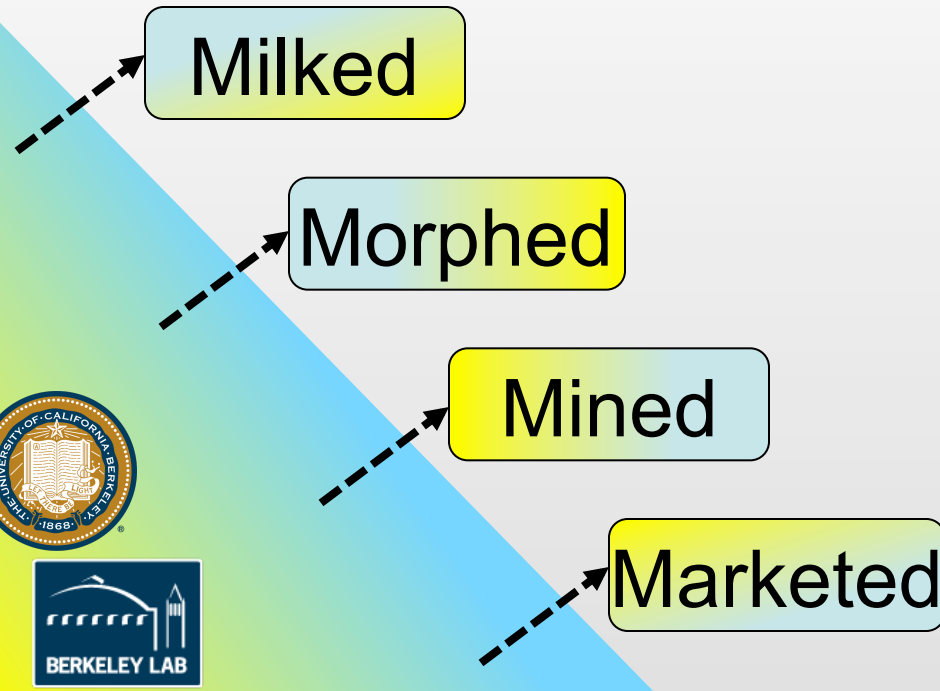
***Cluster of R&D-oriented
entities readily accessible
– including small & large
corps, tech vets,
entrepreneurs & early
stage investors as well as
related supply chains &
service providers***

Innovation Ecosystem: *Continuum*

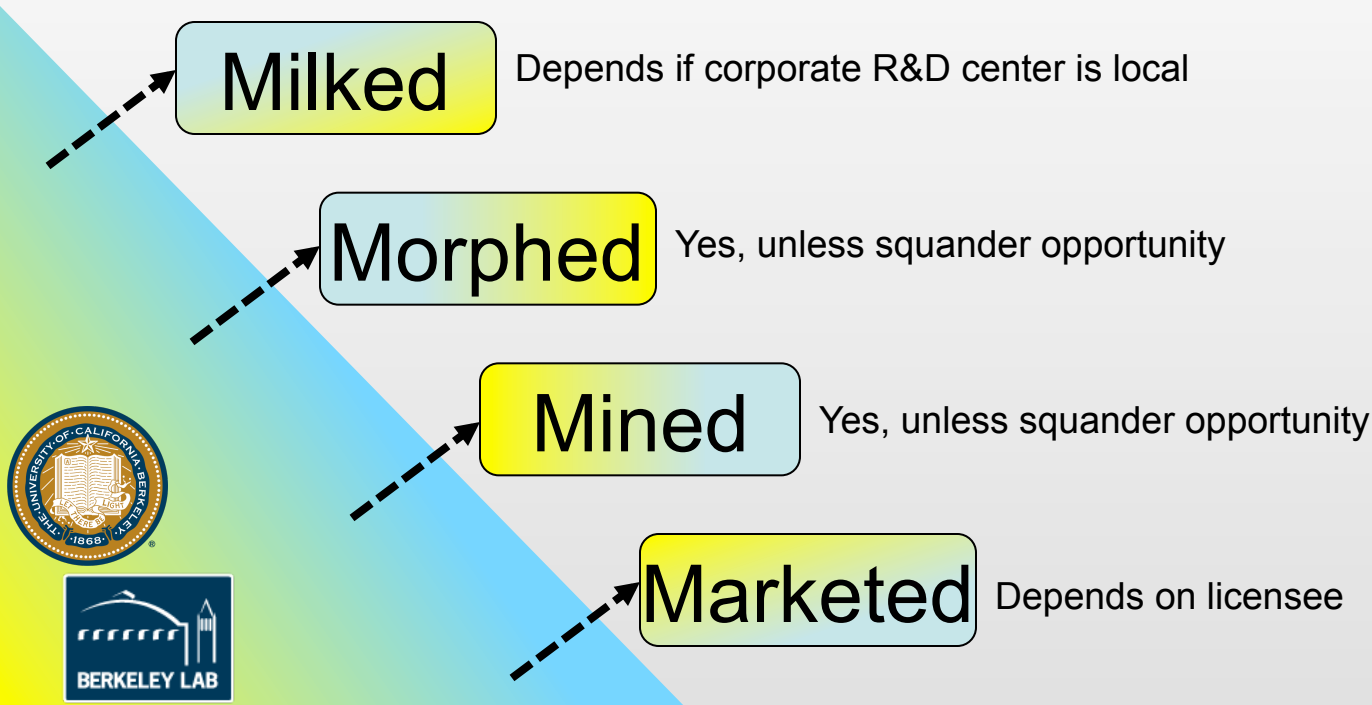
Cluster of R&D-oriented entities readily accessible – including small & large corps, tech vets, entrepreneurs & early stage investors as well as related supply chains & service providers



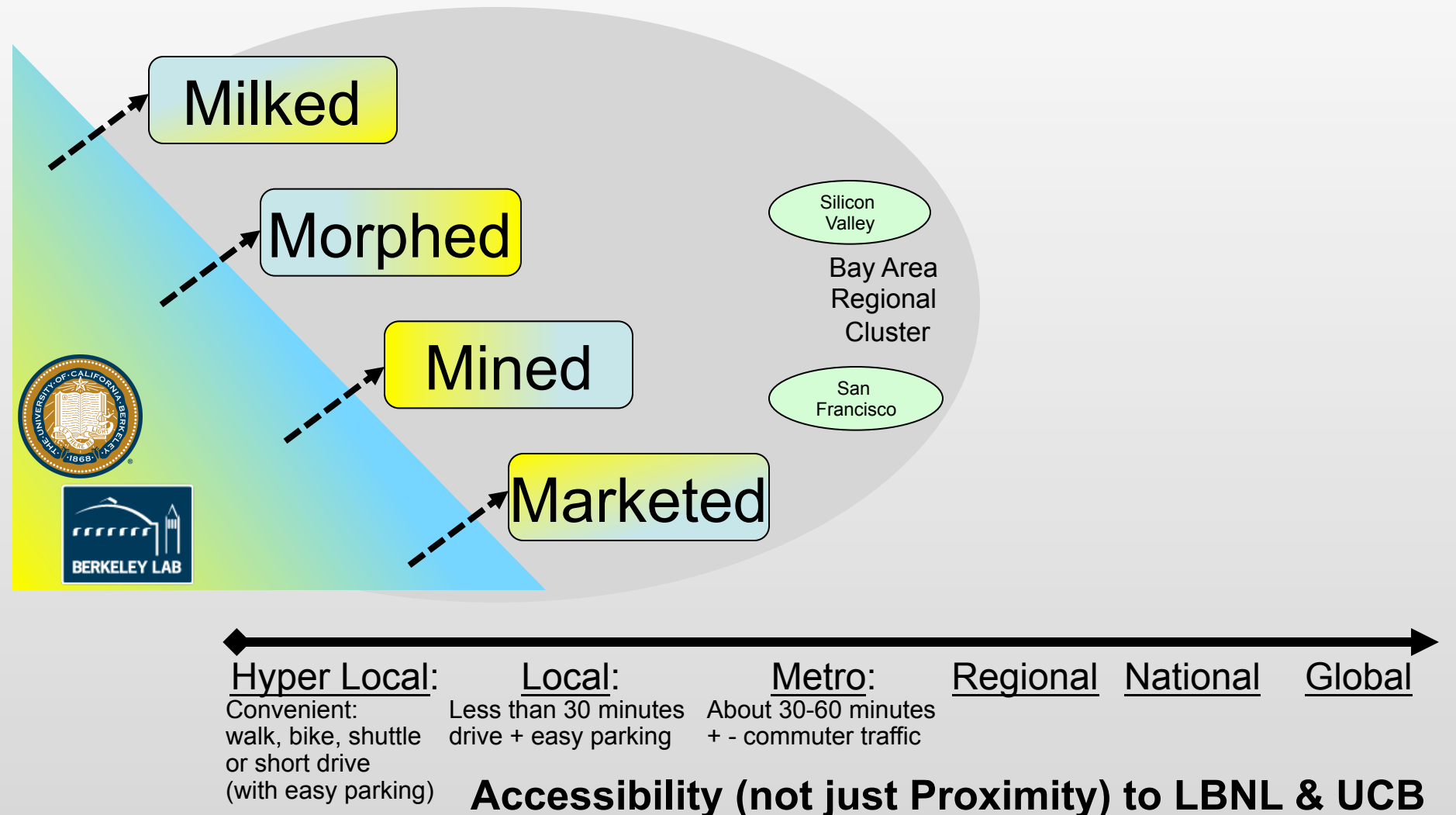
Innovation Ecosystem: *4M Pathways*



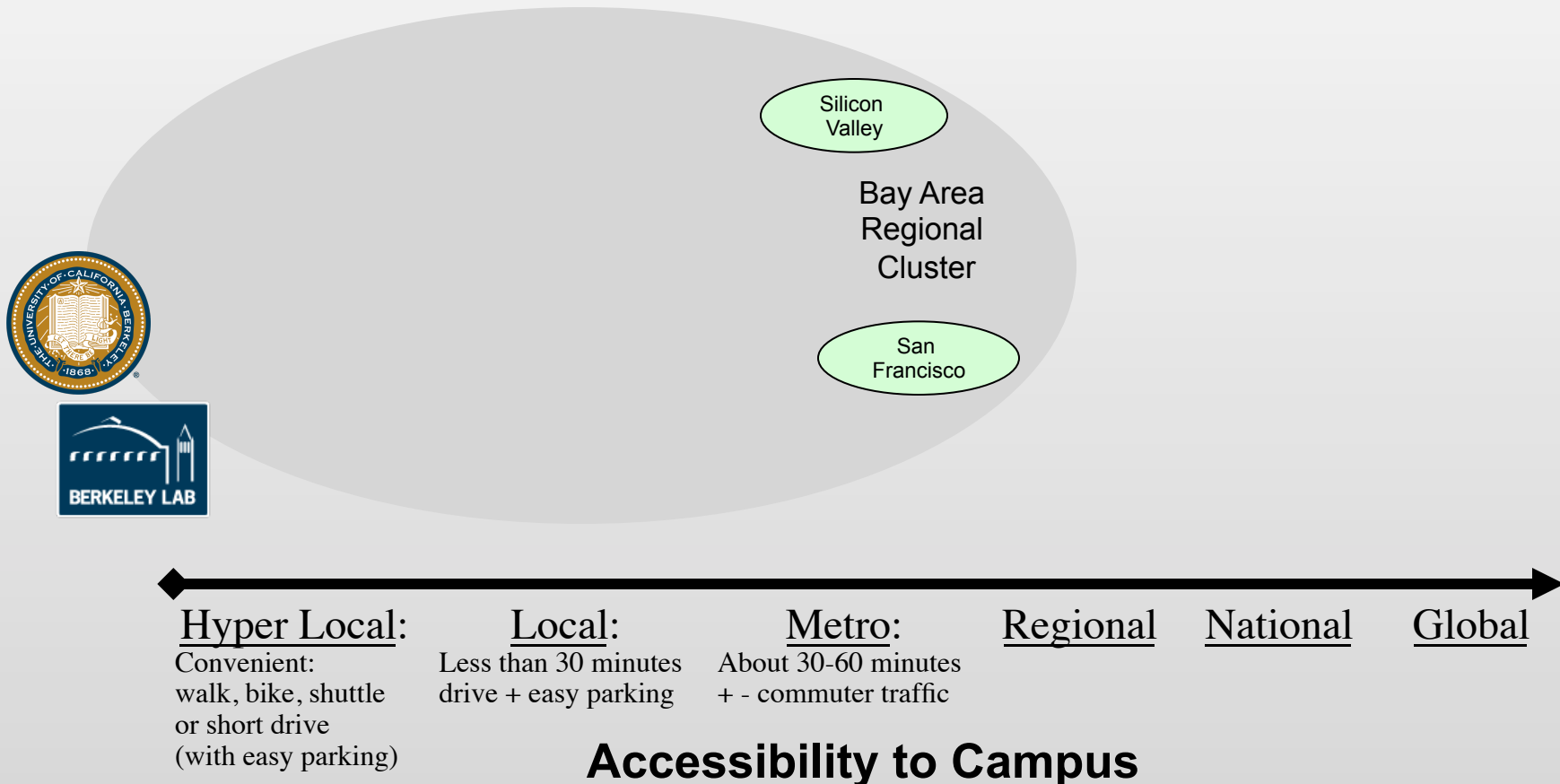
Innovation Ecosystem: *4M Pathways Locations*



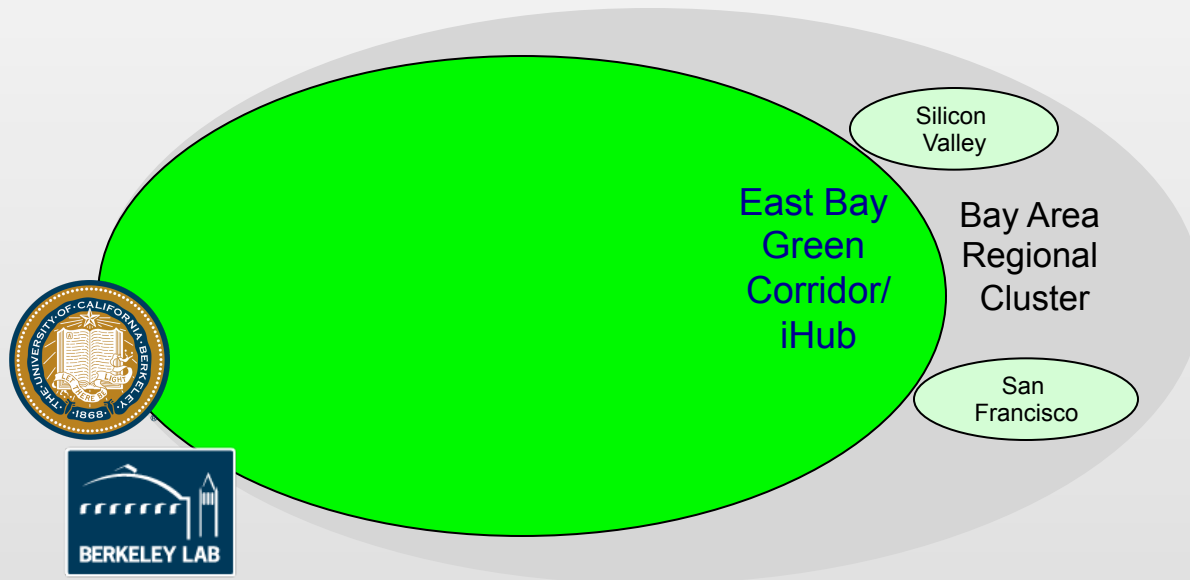
Innovation Ecosystem: *Low Barriers to EB Exit*



Innovation Ecosystem: *Bay Area*



Innovation Ecosystem: *Initiative for East Bay*



Hyper Local:

Convenient:
walk, bike, shuttle
or short drive
(with easy parking)

Local:

Less than 30 minutes
drive + easy parking

Metro:

About 30-60 minutes
+ - commuter traffic

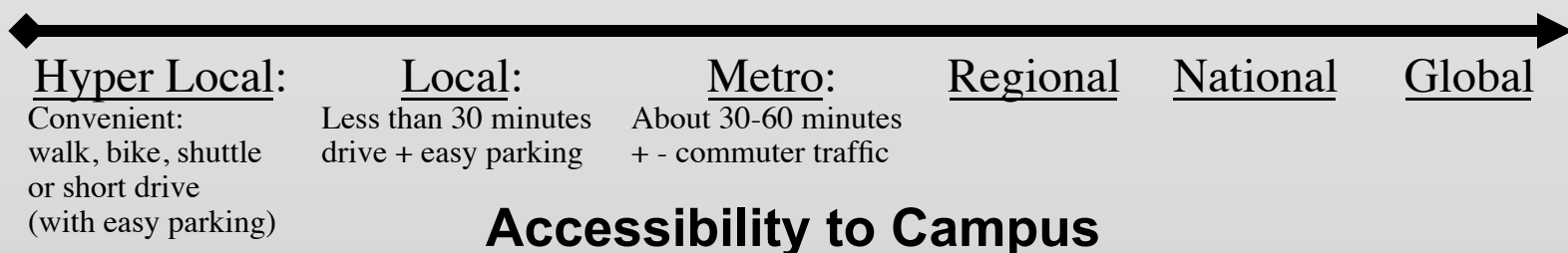
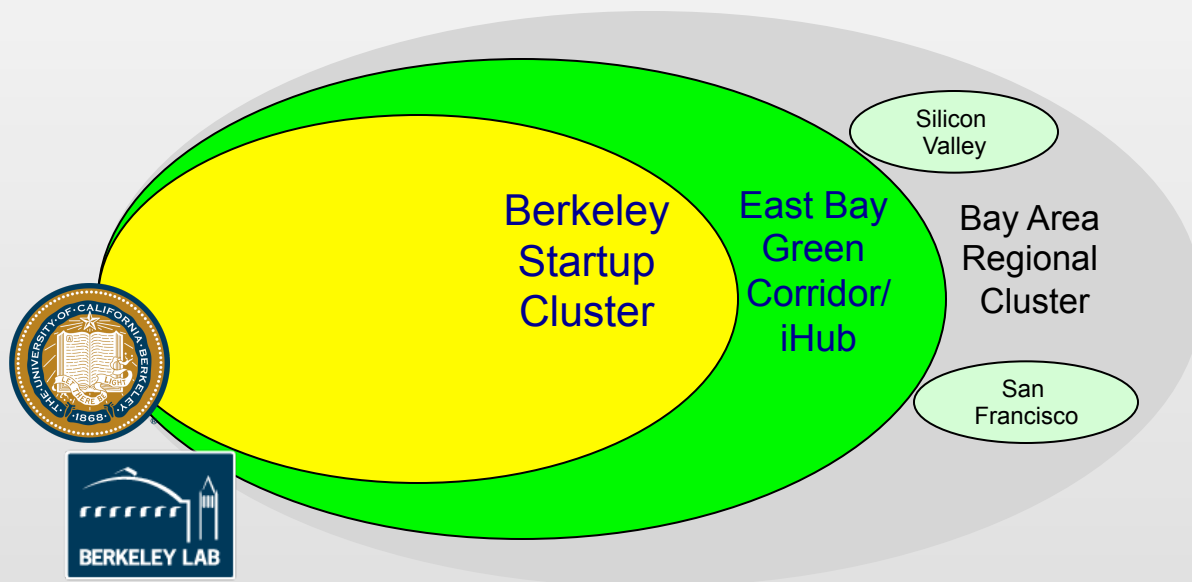
Regional

National

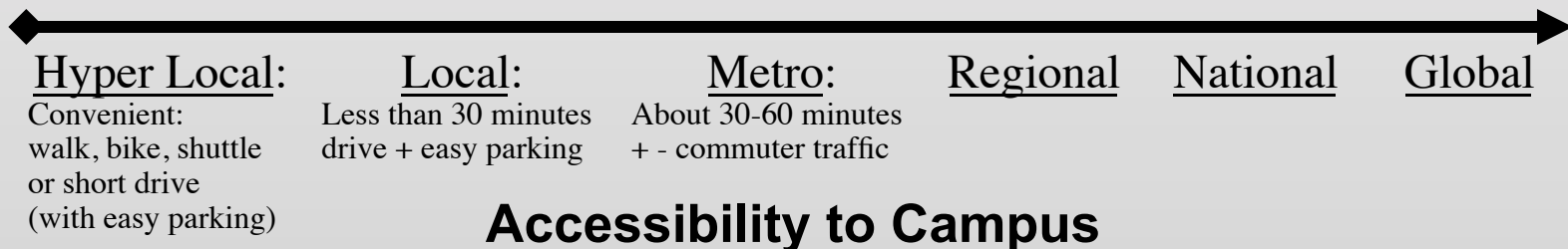
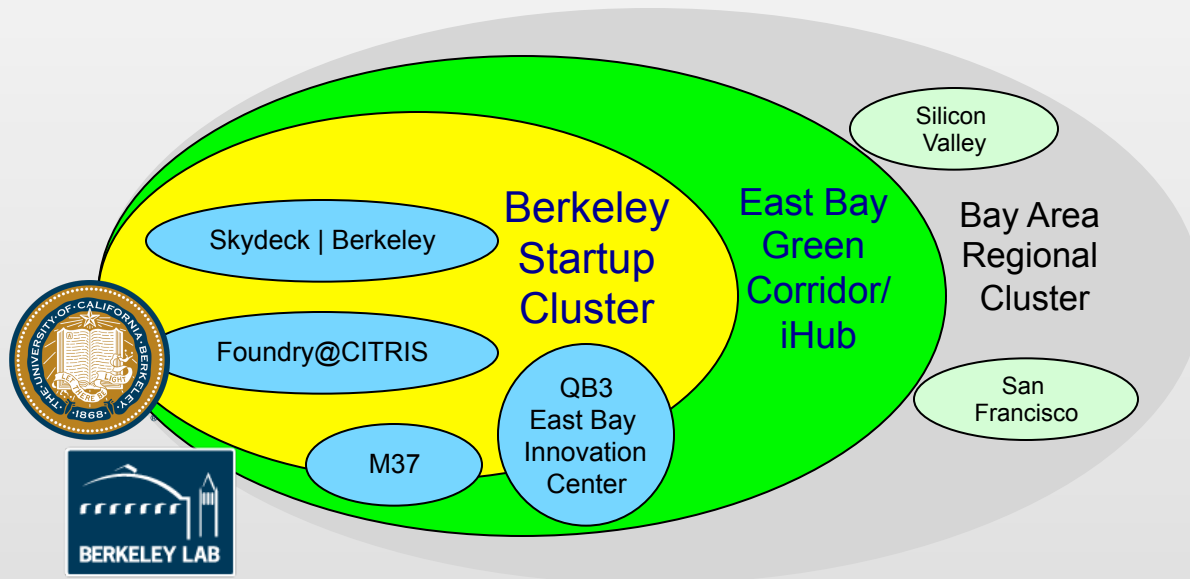
Global

Accessibility to Campus

Innovation Ecosystem: *Initiative for City of Berkeley*



Innovation Ecosystem: *Incubators & Accelerators*

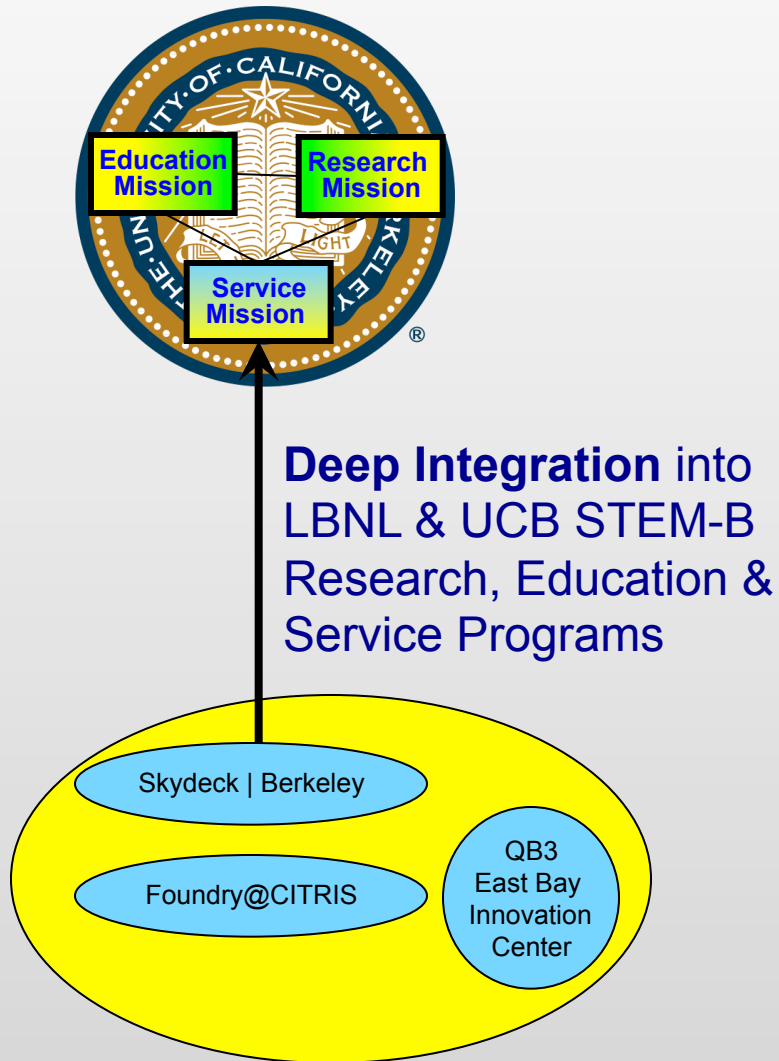


Localization: *Deep Integration into Univ STEM-B**

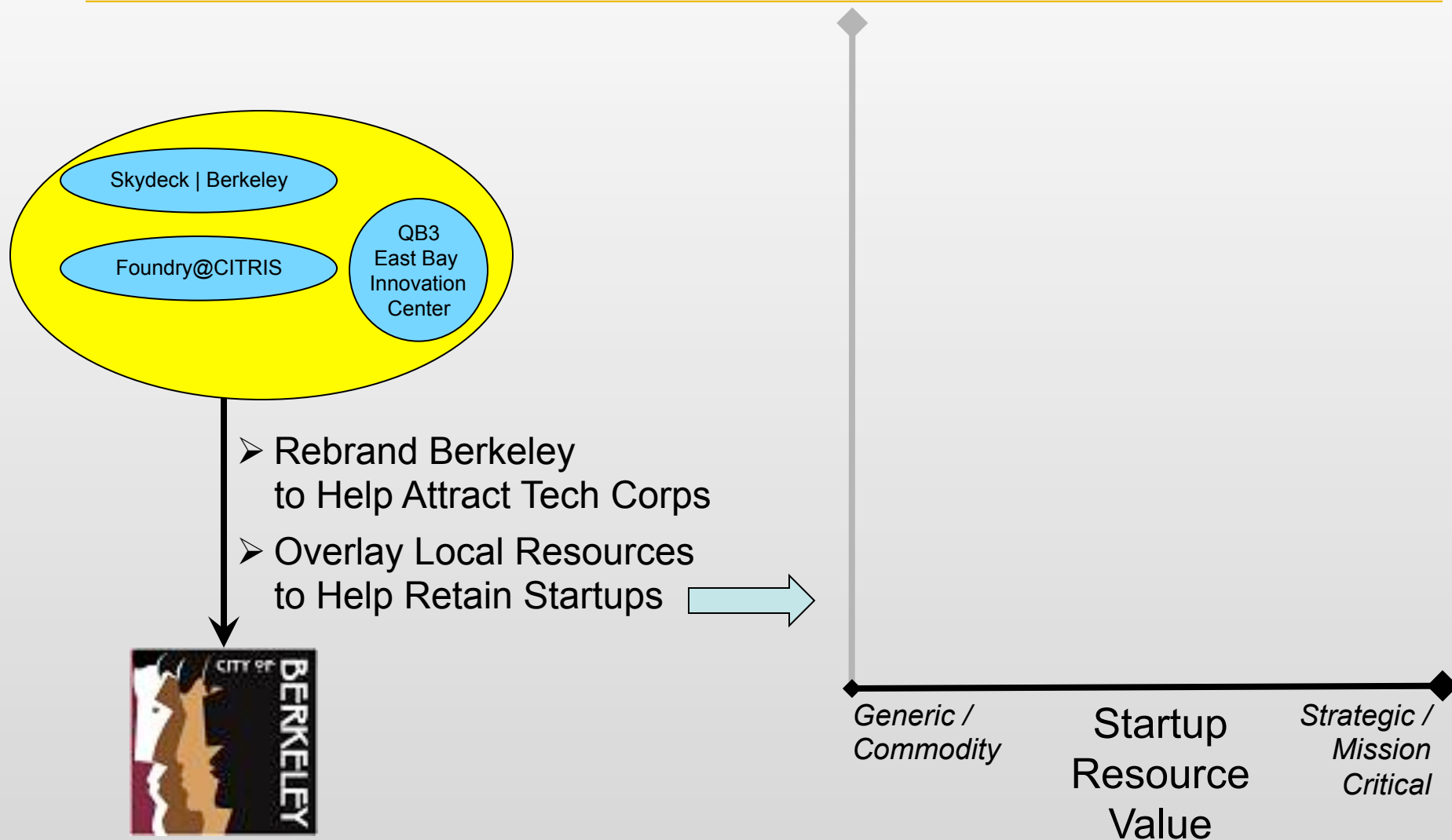
**STEM-B: Science, Technology, Engineering, Math & Business*

BENEFITS:

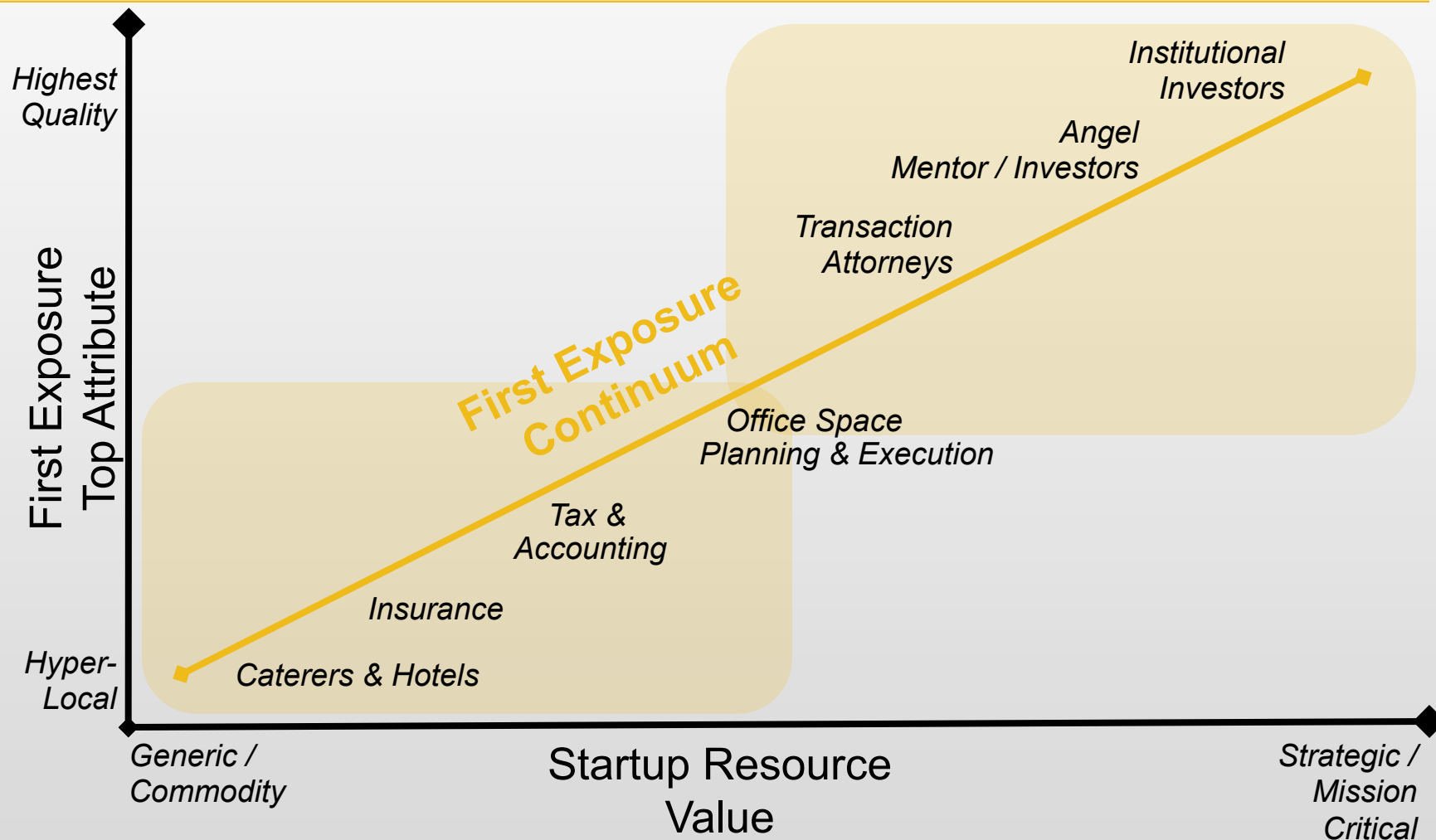
- Commercialization of campus innovations (& licensing of Intellectual Property)
- Experiential learning & internships for students
- Entrepreneurship opportunities for graduates
- Collaborations with university faculty
- Mentorship from alumni & UC Berkeley network
- Exchanges with partner university incubators
- Advantages to attract top faculty & students
- Serendipitous discussions that create corps (researchers, entrepreneurs & investors)



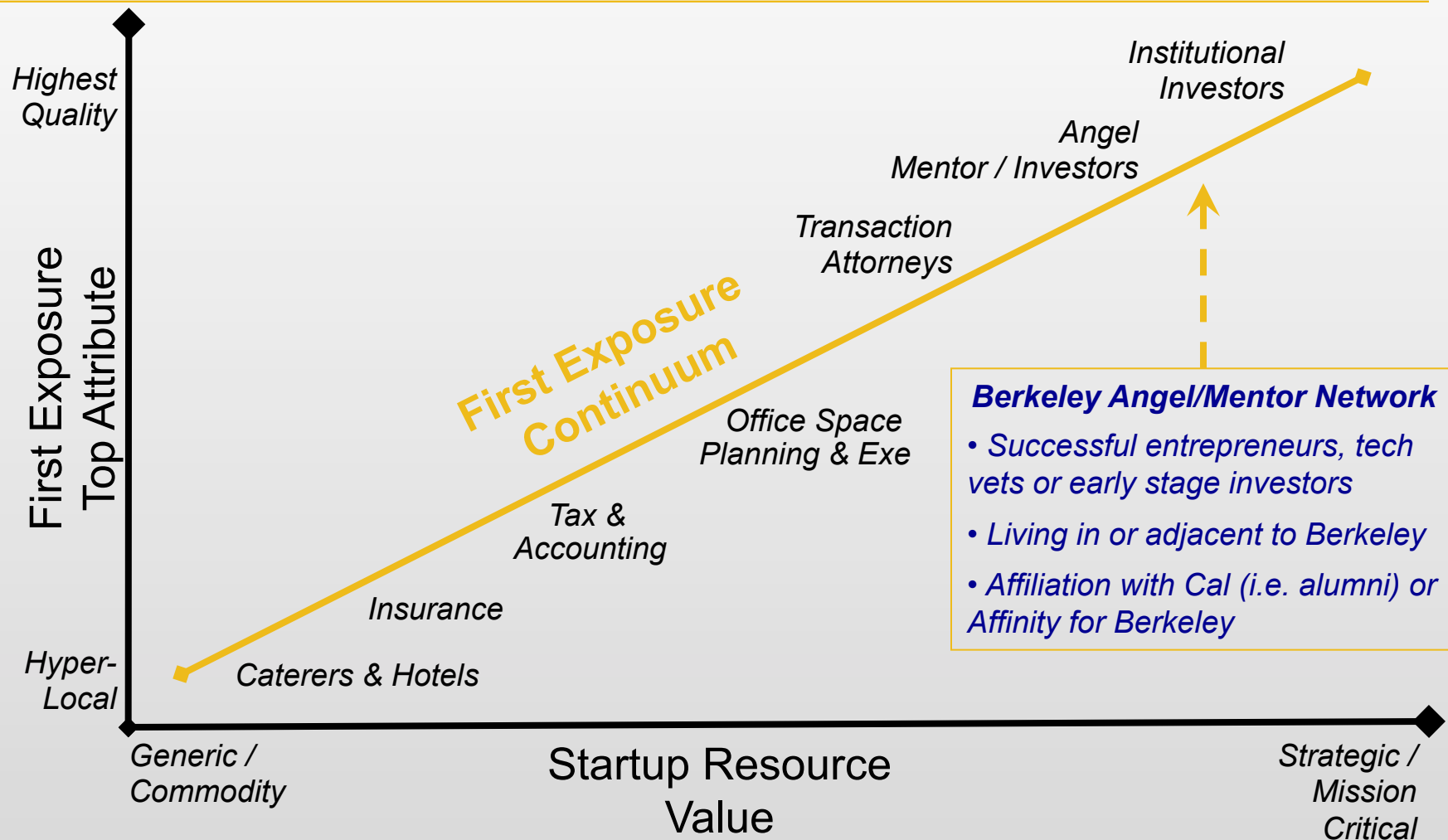
Strategy: *Segmenting Local Resources*



Strategy: *First Exposure* (not required or pushed)



Strategy: *Build Berkeley Angel/Mentor Network*



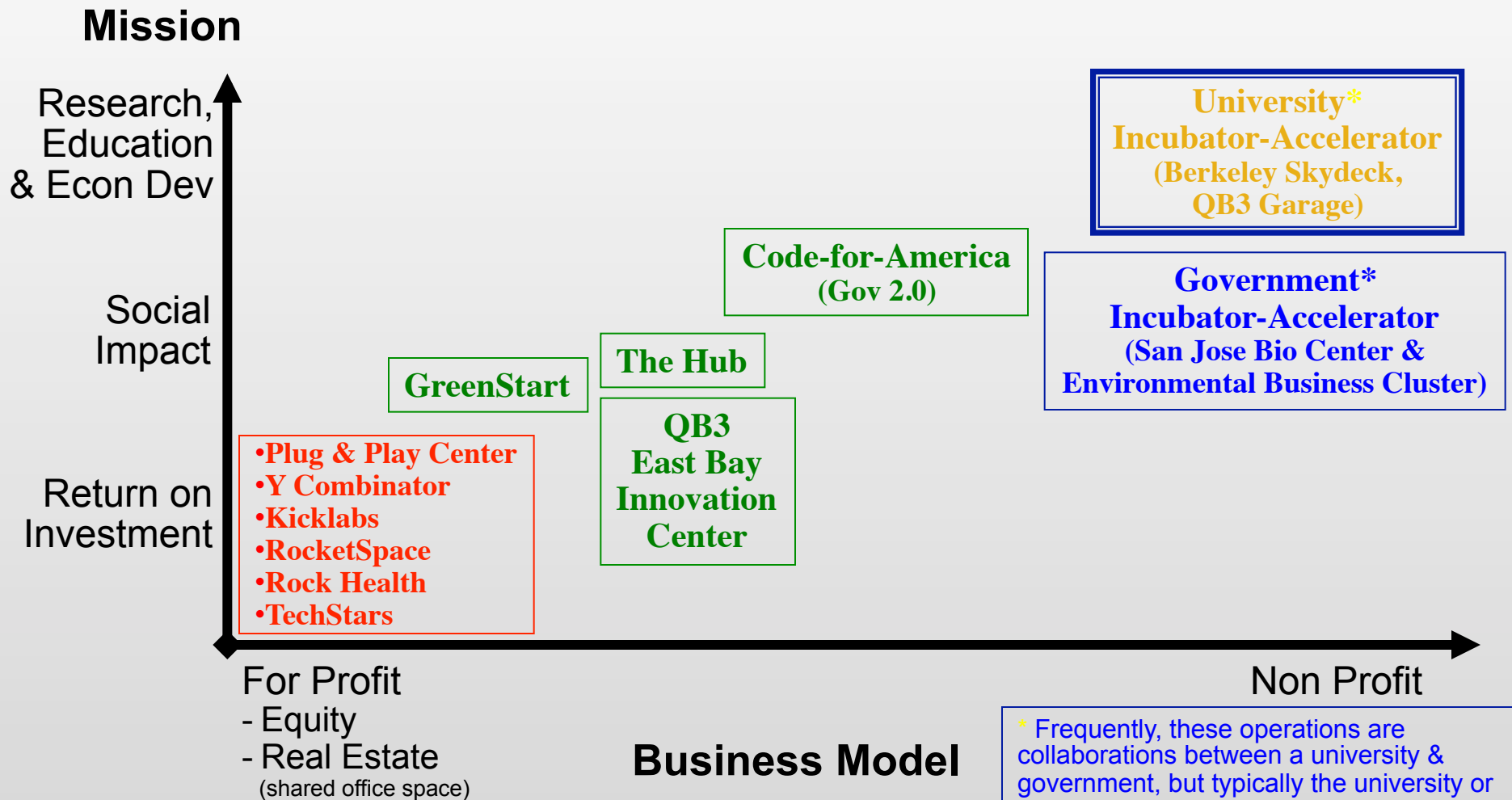
Localization: *Role of University Startup Accelerators*

Over 300
Startup Incubators-Accelerators
Why Do We Need Yet Another?
What Makes the **Berkeley's** Different
& How Can We Leverage It?

Localization: *Accelerator Segmentation*



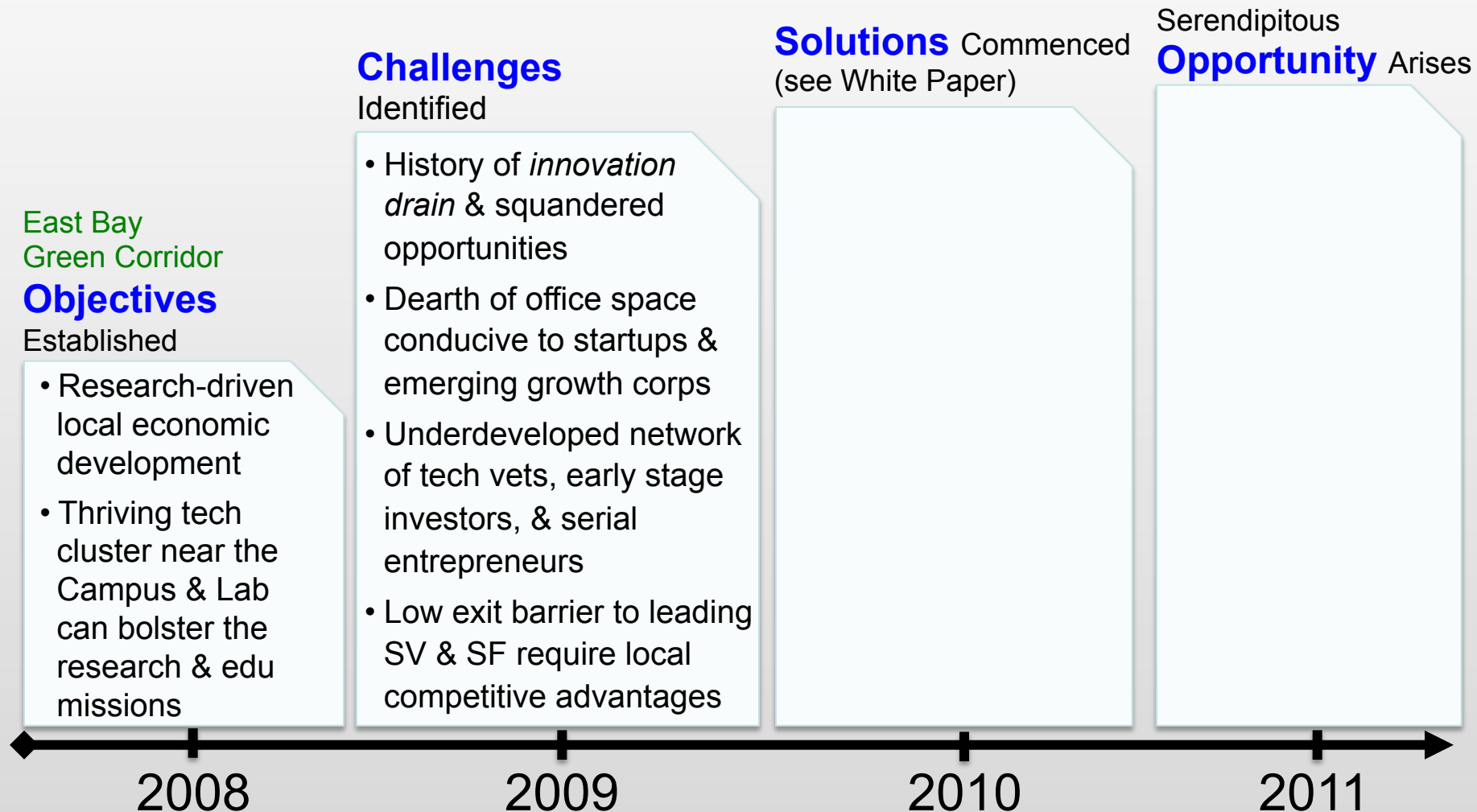
Localization: *Accelerator Landscape*



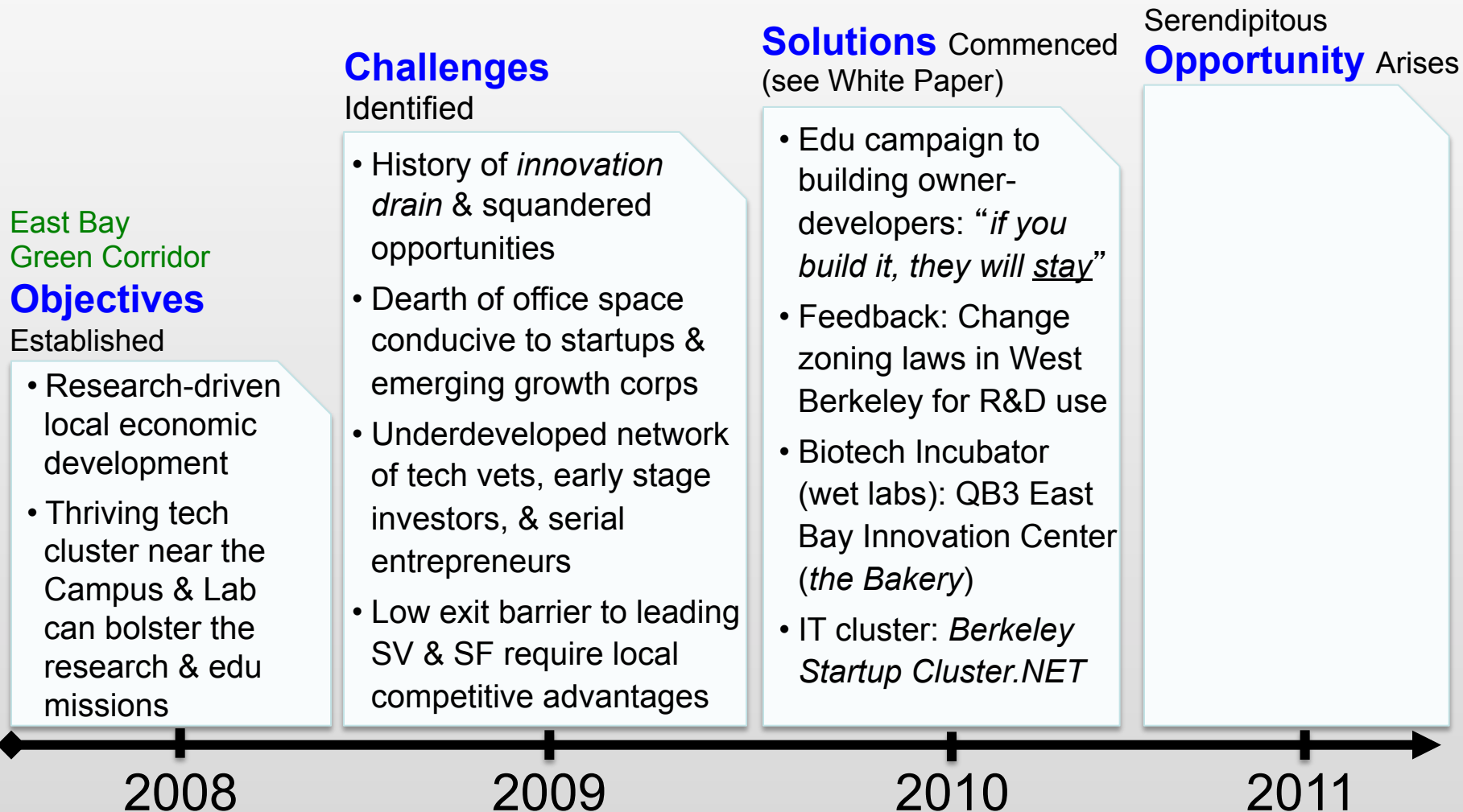
Case Study: *Berkeley Hy-LIE – Inspiration*



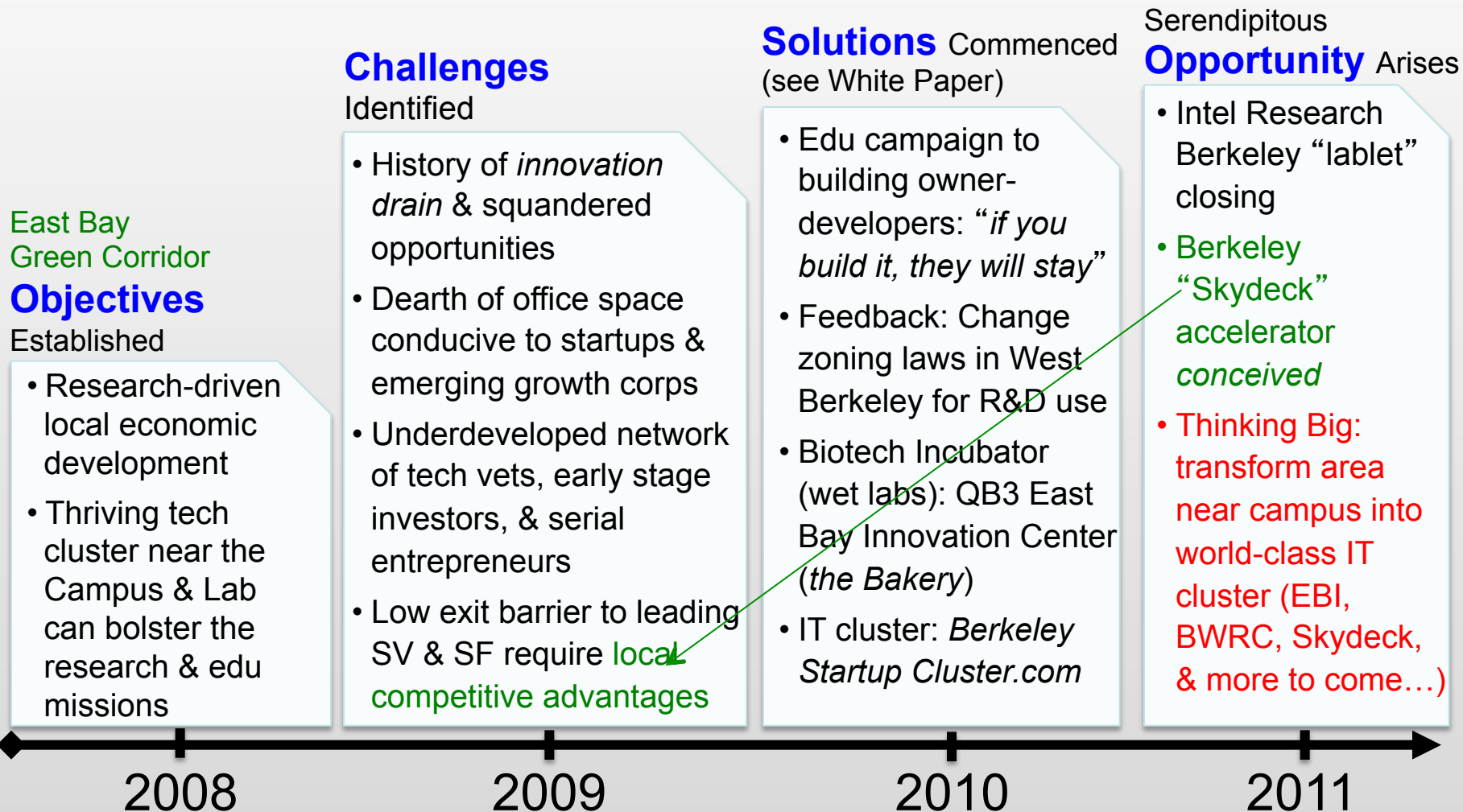
Case Study: *Berkeley Hy-LIE – Challenges*



Case Study: *Berkeley Hy-LIE – Solutions*



Case Study: *Berkeley Hy-LIE – Opportunities*



Case Study: *Berkeley Hy-LIE – Next Steps*

Execution

- Skydeck accelerator becomes epicenter for the Berkeley Startup Cluster
- The Berkeley Startup Cluster grows events (see website)
- The Berkeley Startup Cluster forms an Advisory Committee:
 - Civic and business missions
 - Berkeley residents who are successful tech vets, entrepreneurs or early stage investors

Status

- Accelerators:
 - Skydeck (software)
 - Foundry@CITRIS
 - QB3 East Bay Innovation Center
- Startup Office Space:
 - NextSpace – Berkeley
 - HUB – Berkeley
 - Sandbox Suites - Berkeley
 - Skydeck building full

Plan

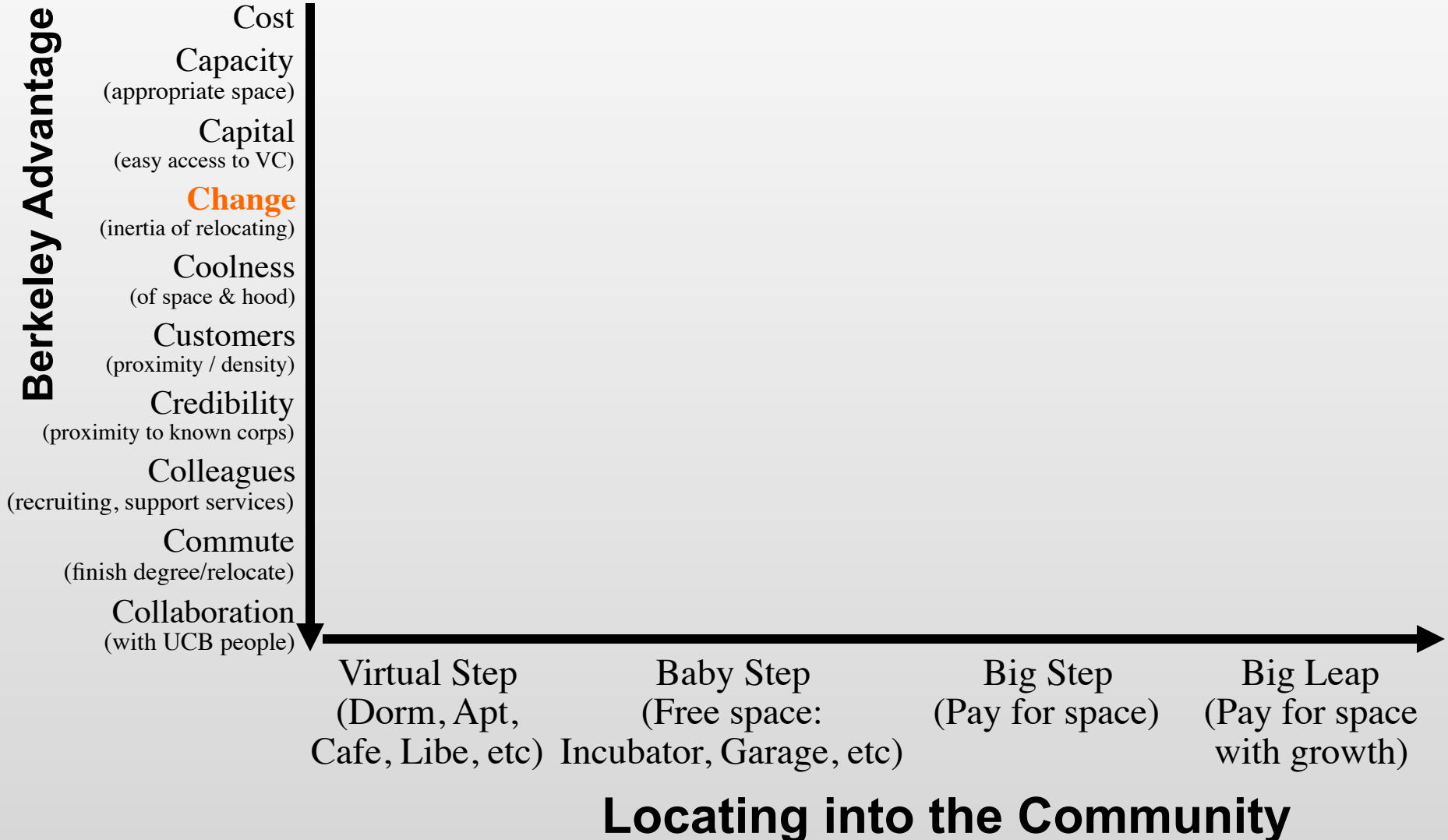
- More Class A office space
- More events
- Larger & denser people networks
- Better connections between Campus & Berkeley Startup Cluster to West Berkeley (~2 miles from campus)

2012

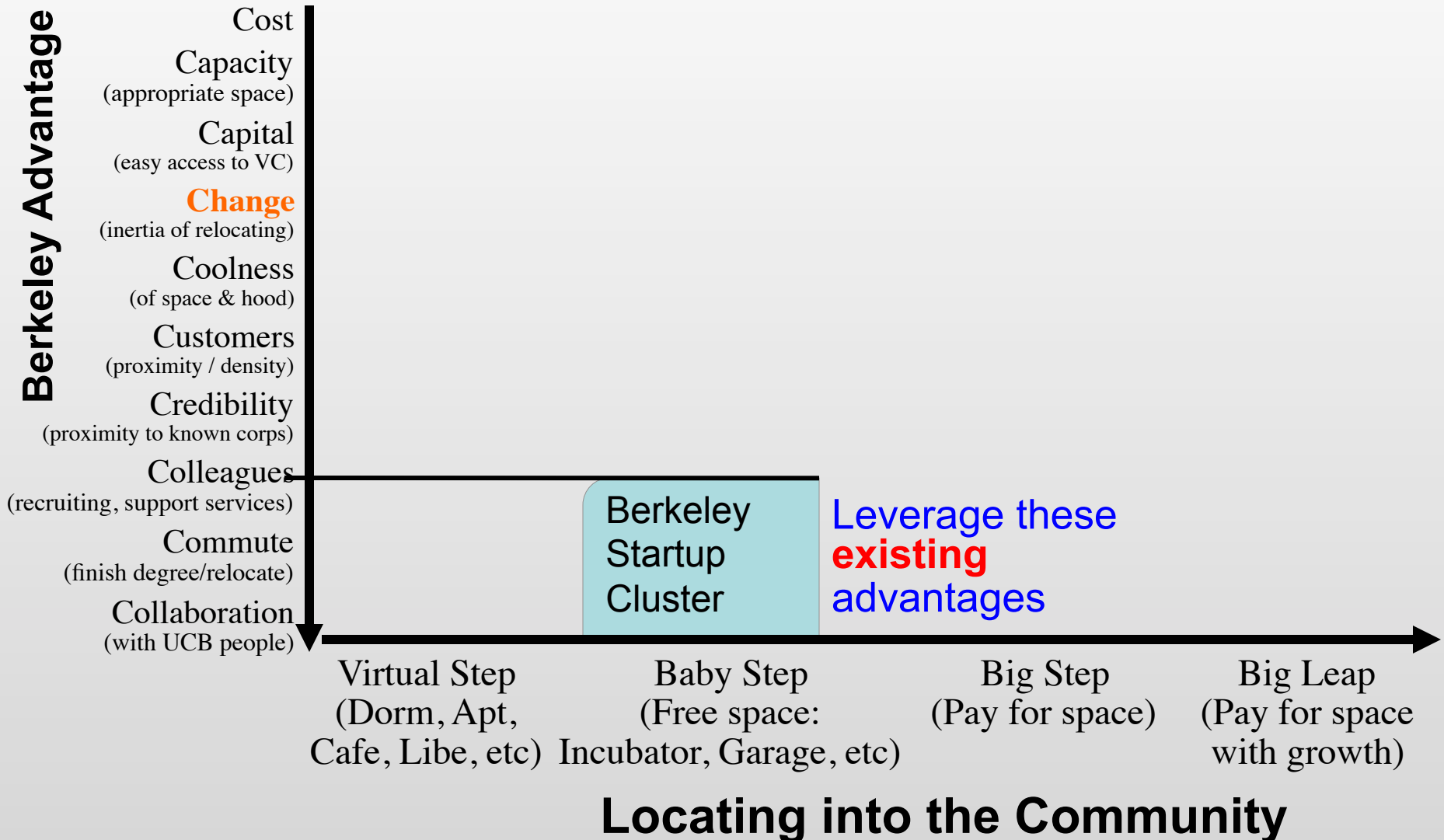
2013

2014

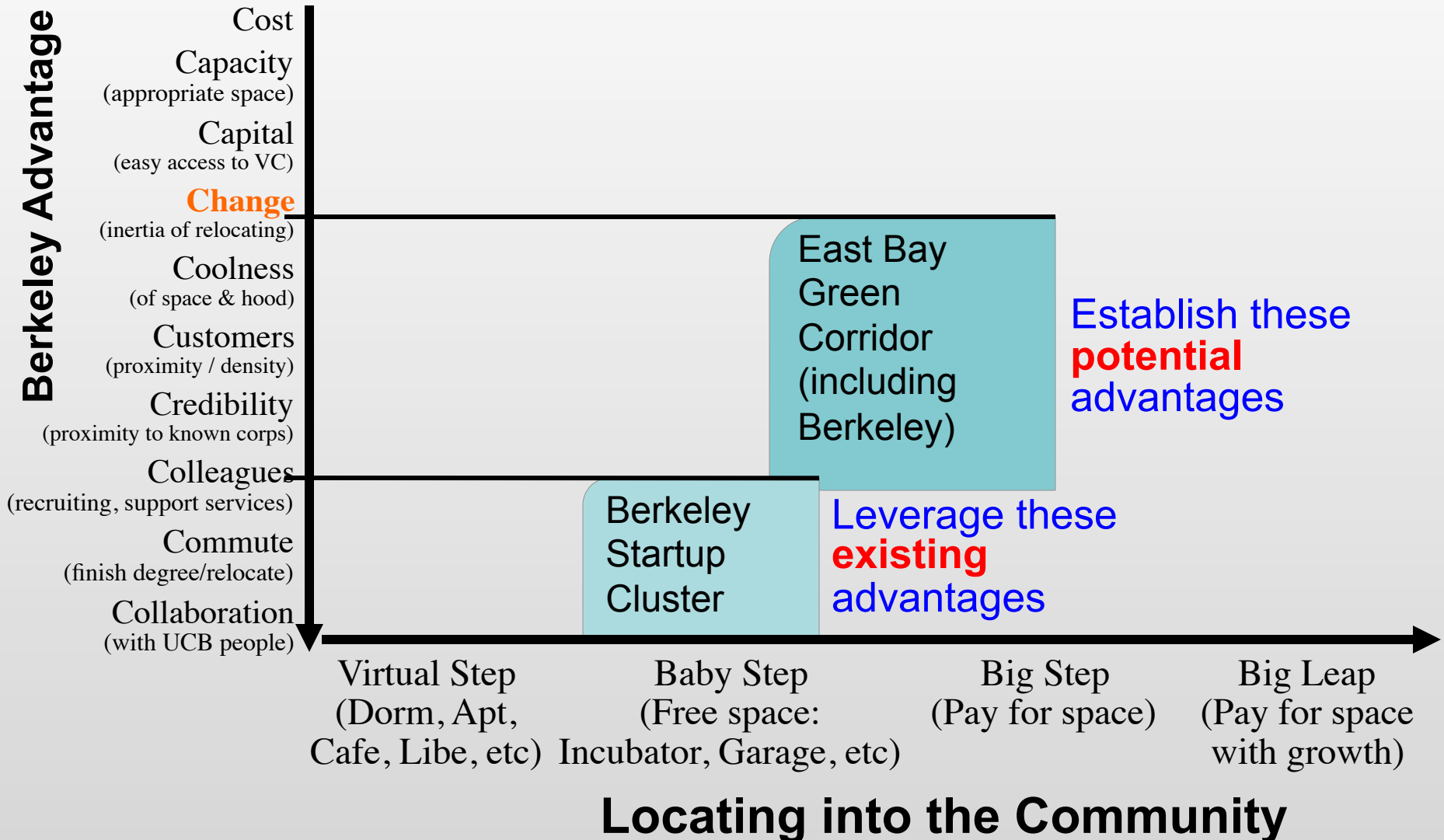
Case Study: *Berkeley Competitive Strategy*



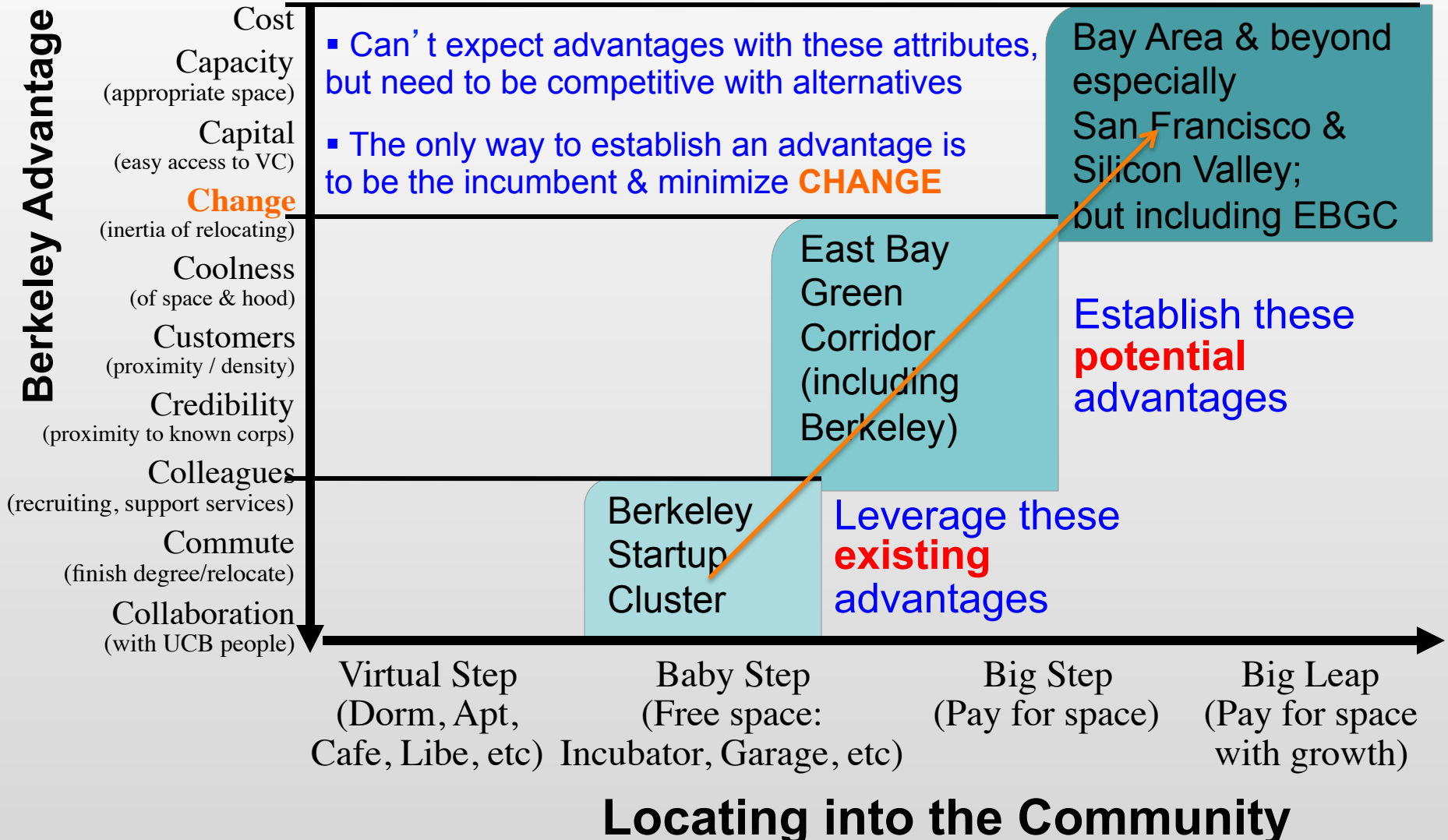
Case Study: *Berkeley Competitive Strategy*



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Case Study: *Berkeley Competitive Strategy*



Agenda: Q & A

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4. Case Study: Berkeley CA
5. Q & A

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